

WHAT IS CLAIMED IS:

1. A device to extend the useful life of a lubricant in an EGR equipped engine comprising:

5

- a) A chemical filter placed in the EGR stream
- b) A heat exchanger /cooler placed in the upstream of the filter to reduce the temperature of said EGR stream and to increase the relative humidity.

10

2. A device as in Claim 1 wherein the chemical filter is placed in said EGR stream such that the relative humidity is greater than about 20%.

3. A device as in Claim 1 wherein the chemical filter is placed in said
15 EGR stream such that the preferred relative humidity is greater than about 50%.

4. A method to extend the useful life of an EGR equipped internal combustion engine using the system described in Claim 1.

20 5. A device to extend the useful life of a lubricant in an EGR equipped engine comprising:

- a) An optional chemical filter placed in the EGR stream
- b) A chemical filter placed just before the intake manifold
- 25 c) A heat exchanger / cooler placed in the upstream of the chemical filters to reduce the temperature of said EGR stream and to increase the relative humidity.

6. A device as in Claim 5 wherein the chemical filter is placed in said locations such that the relative humidity is greater than about 20 / .

7. A device as in Claim 5 wherein the chemical filter is placed in said
5 locations such that the preferred relative humidity is greater than about 50%.

8. A method to extend the useful life of an EGR equipped internal combustion engine using the system described in Claim 5.

10 9. A device to extend the useful life of a lubricant in an EGR equipped engine comprising:

- a) A chemical filter placed in the EGR stream
- b) A heat exchanger / cooler placed in the upstream of the chemical
15 filter to reduce the temperature of said EGR stream and to increase the relative humidity
- c) An oil filter capable of neutralizing acids in the engine lubricant

10. A device as in Claim 9 wherein the chemical filter is placed said
20 locations such that the relative humidity is greater than about 20%.

11. A device as in Claim 9 wherein the chemical filter is placed said locations such that the preferred relative humidity is greater than about 50%.

25 12. A method to extend the useful life of an EGR equipped internal combustion engine using the system described in Claim 9.

13. A device to extend the useful life of a lubricant in an EGR equipped engine comprising:

- a) An optional chemical filter placed in the EGR stream
- b) A chemical filter placed just before the intake manifold
- c) A heat exchanger / cooler placed in the upstream of the chemical
5 filters to reduce the temperature of said EGR stream and to
increase the relative humidity
- d) An oil filter capable of neutralizing acids in the engine lubricant.

14. A device as in Claim 13 wherein the chemical filter is placed said
10 locations such that the relative humidity is greater than about 20%.

15. A device as in Claim 13 wherein the chemical filter is placed said
locations such that the preferred relative humidity is greater than about 50%.

15 16. A method to extend the useful life of an EGR equipped internal
combustion engine using the system described in Claim 13.